WB72-SC

Rev. A+
System Board
User's Manual

51300131

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Caution

To avoid damage to the system:

- Use the correct AC input voltage range.

To reduce the risk of electric shock:

- Unplug the power cord before removing the system chassis cover for installation or servicing. After installation or servicing, cover the system chassis before plugging the power cord.

Battery:

- Danger of explosion if battery incorrectly replaced.
- Replace only with the same or equivalent type recommend by the manufacturer.
- Dispose of used batteries according to the battery manufacturer's instructions.

Joystick or MIDI port:

- Do not use any joystick or MIDI device that requires more than 10A current at 5V DC. There is a risk of fire for devices that exceed this limit.

FCC and DOC Statement on Class B

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio TV technician for help.

Notice:

1. The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

2. Shielded interface cables must be used in order to comply with the emission limits.

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Chapter 1 - Introduction

1.1 Features and Specifications

1.1.1 Features

Chipset

- Intel® 845 chipset
  - Intel® 82845 Memory Controller Hub (MCH)
  - Intel® 82801BA I/O Controller Hub (ICH2)

Processor

The system board is equipped with Socket 423 for installing a Pentium® 4 processor.

- Intel® Pentium® 4 processor
- 400MHz system data bus

System Memory

- Three 168-pin PC SDRAM DIMM sockets
- Supports 3GB system memory
  - Uses 64Mbit, 128Mbit, up to 1.5GB using 256Mbit or up to 3GB using 512Mbit technology, PC-100/PC-133 PC SDRAM DIMM
- Supports ECC function

DIMMs	Memory Size	DIMMs	Memory Size
2MBx64/x72	16MB	16MBx64/x72	128MB
4MBx64/x72	32MB	32MBx64/x72	256MB
8MBx64/x72	64MB	64MBx64/x72	512MB

Expansion Slots

The system board is equipped with 1 AGP slot, 4 dedicated PCI slots and 1 shared PCI/CNR slot.

The AGP slot only supports 1.5V AGP 4x (1066MB/sec. bandwidth) add-in cards. AGP is an interface designed to support high performance 3D graphics cards for 3D graphics applications. It handles large amounts of graphics data with the following features:

- Pipelined memory read and write operations that hide memory access latency.
- Demultiplexing of address and data on the bus for nearly 100 percent efficiency.

CNR (Communication and Networking Riser) is an interface that supports multi-channel audio, V.90 analog modem, phone-line based networking or 10/100 Ethernet based networking riser board.

Onboard Audio Features

- 18-bit stereo full-duplex codec with independent variable sampling rate
- High quality differential CD input
- True stereo line level outputs

Compatibility

- Microsoft PC '98 compliant
- PCI 2.2, CNR 1.0 "A" type and AC '97 compliant
- Intel AGP version 2.0

ATX Double Deck Ports (PC 99 color-coded connectors)

- Two USB ports
- Two NS16C550A-compatible DB-9 serial ports
- One SPP/ECP/EPP DB-25 parallel port
- One mini-DIN-6 PS/2 mouse port
- One mini-DIN-6 PS/2 keyboard port
- One game/MIDI port
- Three audio jacks: line-out, line-in and mic-in

Connectors

- One connector for 2 additional external USB ports
- One connector for IrDA interface
- Two IDE connectors
- One floppy drive interface supports up to two 2.88MB floppy drives
- Three ATX power supply connectors
- One Wake-On-LAN connector
- One Wake-On-Ring connector
- CPU, system and second fan connectors
- Two internal audio connectors (CD-in and TAD)

PCI Bus Master IDE Controller

- Two PCI IDE interfaces support up to four IDE devices
- Supports ATA/33, ATA/66 and ATA/100 hard drives
- PIO Mode 4 Enhanced IDE (data transfer rate up to 14MB/sec.)
- Bus mastering reduces CPU utilization during disk transfer
- Supports ATAPI CD-ROM, LS-120 and ZIP

IrDA Interface

The system board is equipped with an IrDA connector for wireless connectivity between your computer and peripheral devices. It supports peripheral devices that meet the IrDA or ASKIR standard.

USB Ports

The system board supports 4 USB ports. Two onboard USB ports are located at the ATX double deck ports of the board. The J16 connector on the system board allows you to connect the optional 3rd and 4th USB ports.

BIOS

- Award BIOS, Windows® 98/2000/ME/XP Plug and Play compatible
- Flash EPROM for easy BIOS upgrades
- Supports DMI 2.0 function

Desktop Management Interface (DMI)

The system board comes with a DMI 2.0 built into the BIOS. The DMI utility in the BIOS automatically records various information about your system configuration and stores these information in the DMI pool, which is a part of the system board's Plug and Play BIOS. DMI, along with the appropriately networked software, is designed to make inventory, maintenance and troubleshooting of computer systems easier. Refer to chapter 4 for instructions on using the DMI utility.

1.1.2 System Health Monitor Functions

The system board is capable of monitoring the following “system health” conditions.

- Monitors CPU/system temperature and overheat alarm
- Monitors 5VSB/VBAT/3.3V/5V/±12V/CPU voltages and failure alarm
- Monitors the fan speed of the CPU fan, system fan and second fan; and failure alarm
- Automatic system fan and second fan on/off control
- Read back capability that displays temperature, voltage and fan speed

1.1.3 Intelligence

Automatic System/Second Fan Off

The system and second fans will automatically turn off once the system enters the Suspend mode.

Dual Function Power Button

Depending on the setting in the "Soft-Off By PWR-BTTN" field of the Power Management Setup, this switch will allow the system to enter the Soft-Off or Suspend mode.

Wake-On-Ring

This feature allows the system that is in the Suspend mode or Soft Power Off mode to wake-up/power-on to respond to calls coming through an internal or external modem. Refer to "Wake-On-Ring Connector" in chapter 2 and "Resume On Ring" in the Power Management Setup section in chapter 3 for more information.

Important:
If you are using a modem add-in card, the 5VSB power source of your power supply must support ≥720mA.

Wake-On-LAN

The Wake-On-LAN function allows the network to remotely wake up a Soft Power Down (Soft-Off) PC. Your LAN card must support the remote wakeup function. Refer to "Wake-On-LAN Connector" in chapter 2 and "Resume On LAN" in the Power Management Setup section in chapter 3 for more information.

Important:
The 5VSB power source of your power supply must support ≥720mA.

Wake-On-Keyboard/Wake-On-Mouse

This function allows you to use the keyboard or PS/2 mouse to power-on the system. Refer to "Jumper Settings for Wake-On-Keyboard/Wake-On-Mouse" in chapter 2 and "Keyboard/Mouse Power On" in the Integrated Peripherals section in chapter 3 for more information.

Important:

- *The power button will not function once a keyboard password has been set in the "KB Power On Password" field of the Integrated Peripherals submenu. You must type the correct password to power-on the system. If you forgot the password, power-off the system and remove the battery. Wait for a few seconds and install it back before powering-on the system.*
- *The 5VSB power source of your power supply must support ≥720mA.*

Wake-On-USB Keyboard

The Wake-On-USB Keyboard function allows you to use a USB keyboard to wake up a system that is in the S3 (STR - Suspend To RAM) state. Refer to "Jumper Settings for Wake-On-USB Keyboard" in chapter 2 and "USB KB Wake-Up From S3" in the Power Management Setup section in chapter 3 for more information.

Important:

- *If you are using the Wake-On-USB Keyboard function for 2 USB ports, the 5VSB power source of your power supply must support ≥1.5A.*
- *If you are using the Wake-On-USB Keyboard function for 4 USB ports, the 5VSB power source of your power supply must support ≥2A.*

RTC Timer to Power-on the System

The RTC installed on the system board allows your system to automatically power-on on the set date and time. Refer to “Resume By Alarm” in the Power Management Setup section in chapter 3 for more information.

ACPI STR

The system board is designed to meet the ACPI (Advanced Configuration and Power Interface) specification. ACPI has energy saving features that enables PCs to implement Power Management and Plug-and-Play with operating systems that support OS Direct Power Management. Currently, only Windows® 98/2000/ME/XP supports the ACPI function. ACPI when enabled in the Power Management Setup will allow you to use the Suspend to RAM function.

With the Suspend to RAM function enabled, you can power-off the system at once by pressing the power button or selecting “Standby” when you shut down Windows® 98/2000/ME/XP without having to go through the sometimes tiresome process of closing files, applications and operating system. This is because the system is capable of storing all programs and data files during the entire operating session into RAM (Random Access Memory) when it powers-off. The operating session will resume exactly where you left off the next time you power-on the system. Refer to “Using the Suspend to RAM Function” in appendix A for more information.

Important:
The 5VSB power source of your power supply must support ≥1A.

AC Power Failure Recovery

When power returns after an AC power failure, you may choose to either power-on the system manually, let the system power-on automatically or return to the state where you left off before power failure occurs. Refer to “PWR Lost Resume State” in the Integrated Peripherals section in chapter 3 for more information.

Year 2000 Compliant

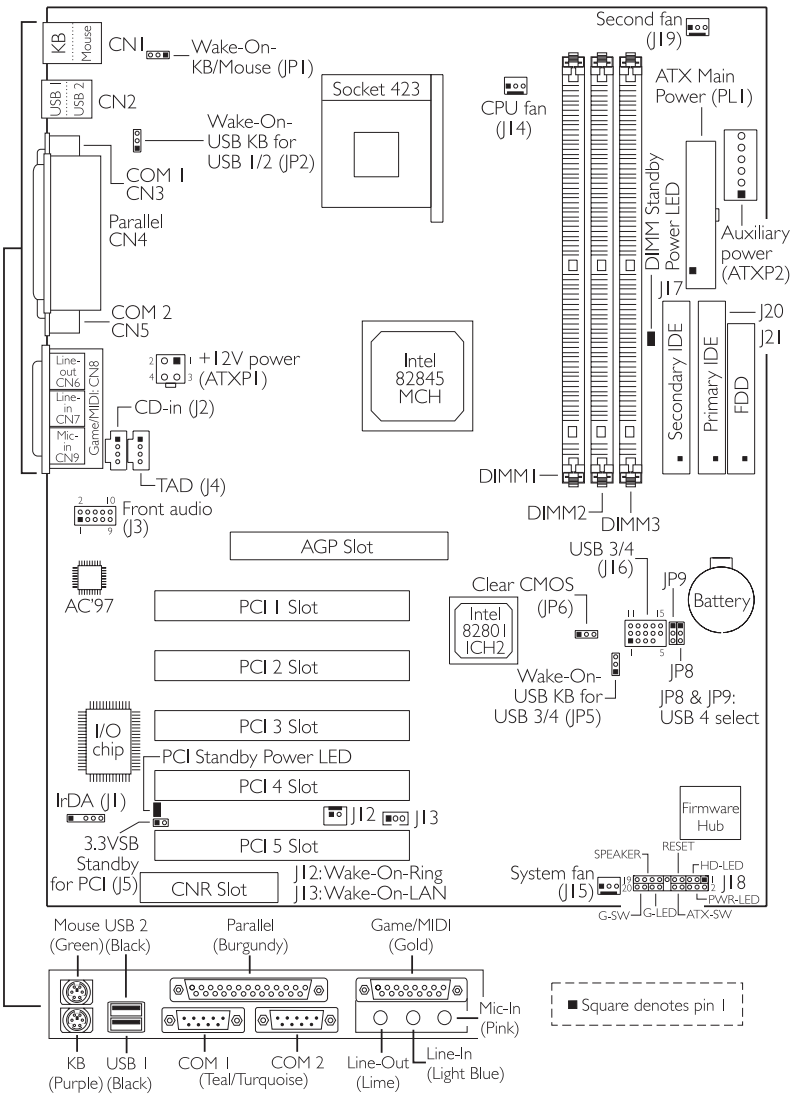
- Supports hardware Y2K function.
- Supports hardware Random Number Generator (RNG) to enable a new security and manageability infrastructure for PC.

Virus Protection

Most viruses today destroy data stored in hard drives. The system board is designed to protect the boot sector and partition table of your hard disk drive.

Chapter 2 - Hardware Installation

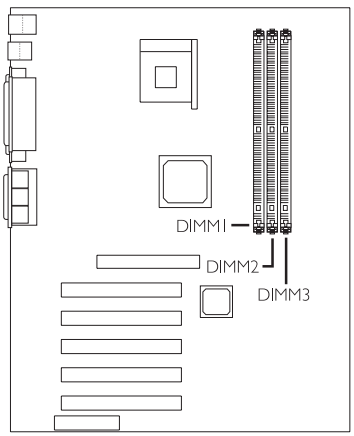
2.1 System Board Layout



WB72-SC

Warning:
Electrostatic discharge (ESD) can damage your system board, processor, disk drives, add-in boards, and other components. Perform the upgrade instruction procedures described at an ESD workstation only. If such a station is not available, you can provide some ESD protection by wearing an antistatic wrist strap and attaching it to a metal part of the system chassis. If a wrist strap is unavailable, establish and maintain contact with the system chassis throughout any procedures requiring ESD protection.

2.2 System Memory



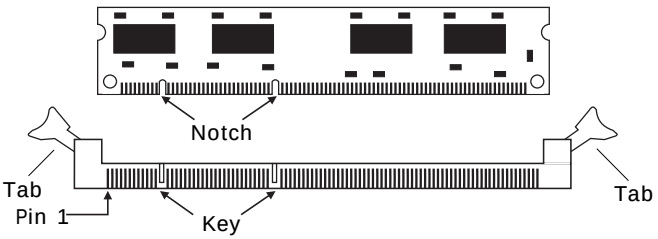
The system board is equipped with three 168-pin DIMM (Dual In-line Memory Module) sockets that support unbuffered PC-133/PC-100 SDRAM DIMM for 133MHz/100MHz system memory bus. PC SDRAM (Synchronous Dynamic Random Access Memory) is a fast memory interface technology that uses the clock on the chip to synchronize with the CPU clock so that the timing of the memory chips and the timing of the CPU are synchronized. This saves time during transmission of data, subsequently increasing system performance.

The system board also supports the ECC (Error Checking and Correction) function. To use this function, you must install DIMM that supports parity. Refer to chapter 1 (System Memory section) for

detailed specification of the memory supported by the system board. “Memory Frequency For” in the Advanced Chipset Features submenu of the BIOS must be set accordingly.

2.2.1 Installing the DIM Module

A DIM module simply snaps into a DIMM socket on the system board. Pin 1 of the DIM module must correspond with Pin 1 of the socket.

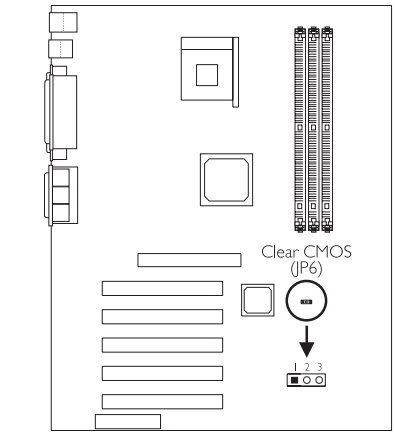


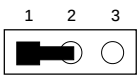
1 Pull the “tabs” which are at the ends of the socket to the side.

2 Position the DIMM above the socket with the “notches” in the module aligned with the “keys” on the socket.

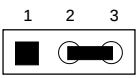
3 Seat the module vertically into the socket. Make sure it is completely seated. The tabs will hold the DIMM in place.

2.3 Jumper Settings for Clearing CMOS Data





1-2 On: Normal (default)



2-3 On: Clear CMOS Data

Clear CMOS Data - Jumper JP6

If you encounter the following,

a) *CMOS data becomes corrupted.*
b) *You forgot the supervisor or user password.*
c) *You are unable to boot-up the computer system because the processor's ratio/clock was incorrectly set in the BIOS.*

you can reconfigure the system with the default values stored in the ROM BIOS.

To load the default values stored in the ROM BIOS, please follow the steps below.

1. Power-off the system.
2. Set JP6 pins 2 and 3 to On. Wait for a few seconds and set JP6 back to its default setting, pins 1 and 2 On.

3. Now power-on the system.

   If your reason for clearing the CMOS data is due to incorrect setting of the processor's ratio/clock in the BIOS, please proceed to step 4.

4. After powering-on the system, press <Del> to enter the main menu of the BIOS.

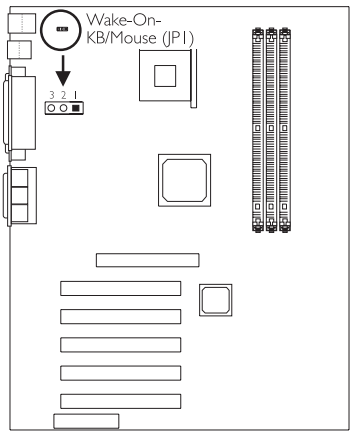
5. Select the CPU Frequency Control submenu and press <Enter>.

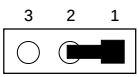
6. Set the "CPU Clock Ratio" or "Clock By Slight Adjust" field to its default setting or an appropriate frequency ratio or bus clock. Refer to the CPU Frequency Control section in chapter 3 for more information.

7. Press <Esc> to return to the main menu of the BIOS setup utility. Select "Save & Exit Setup" and press <Enter>.

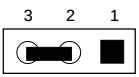
8. Type <Y> and press <Enter>.

2.4 Jumper Settings for Wake-On-Keyboard/ Wake-On-Mouse





1-2 On: Disable (default)



2-3 On: Enable

Wake-On-Keyboard/Wake-On-Mouse - Jumper JP1

The Wake-On-Keyboard/Wake-On-Mouse function allows you to use the keyboard or PS/2 mouse to power-on the system. By default, JP1 is disabled. To use this function, set JP1 to 2-3 On. "Keyboard/ Mouse Power On" in the Integrated Peripherals submenu of the BIOS must be set accordingly. Refer to chapter 3 for details.

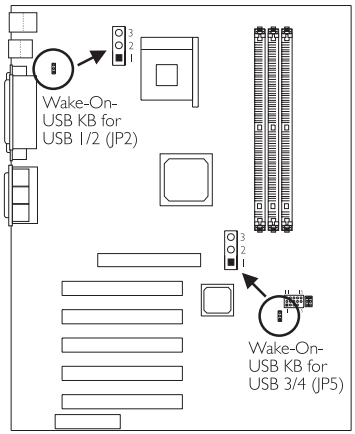
Warning:

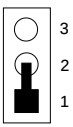
1 *If JP1 was enabled with a password set in the "KB Power On Password" field, and now you wish to disable the keyboard password function, make sure to set the "Keyboard/Mouse Power On" field to Disabled prior to setting JP1 to disabled. You will not be able to boot up the system if you fail to do so.*

2 *The power button will not function once a keyboard password has been set in the "KB Power On Password" field of the Integrated Peripherals submenu. You must type the correct password to power-on the system.*

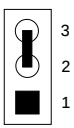
3 *The 5VSB power source of your power supply must support ≥720mA.*

2.5 Jumper Settings for Wake-On-USB Keyboard





1-2 On: Disable (default)



2-3 On: Enable

Wake-On-USB Keyboard for USB 1 and 2 - JP2
Wake-On-USB Keyboard for USB 3 and 4 - JP5

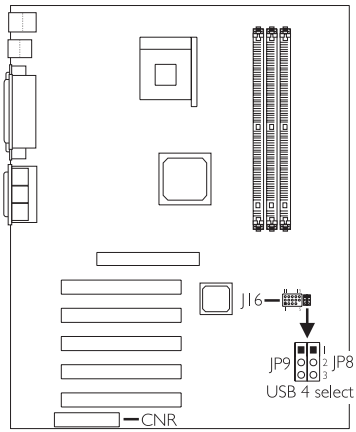
The Wake-On-USB Keyboard function allows you to use a USB keyboard to wake up a system that is in the S3 (STR - Suspend To RAM) state.

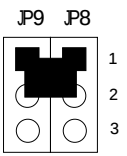
By default, this function is disabled. To use this function, JP2 and JP5 - pins 2 and 3 must be set to On. "USB KB Wake-Up From S3" in the Power Management Setup submenu of the BIOS must also be enabled.

Important:

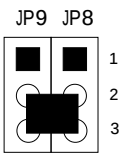
- *If you are using the Wake-On-USB Keyboard function for 2 USB ports, the 5VSB power source of your power supply must support ≥1.5A.*
- *If you are using the Wake-On-USB Keyboard function for 4 USB ports, the 5VSB power source of your power supply must support ≥2A.*

2.6 Jumper Settings for USB 4





1-2 On: USB 4 on J16 (default)



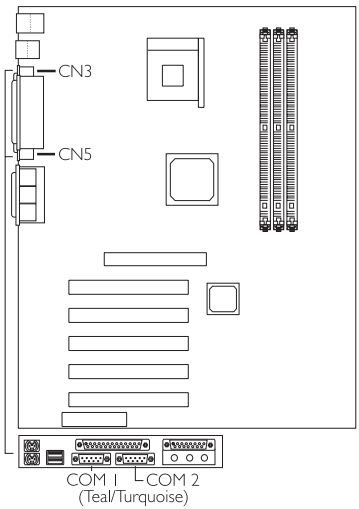
2-3 On: USB 4 on CNR

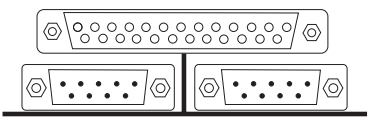
USB 4 Select - Jumpers JP8 and JP9

These jumpers are used to select USB 4's location. Set pins 1 and 2 to On if you want USB 4 on J16. Set pins 2 and 3 to On if you want USB 4 on CNR.

2.7 Ports and Connectors

2.7.1 Serial Ports





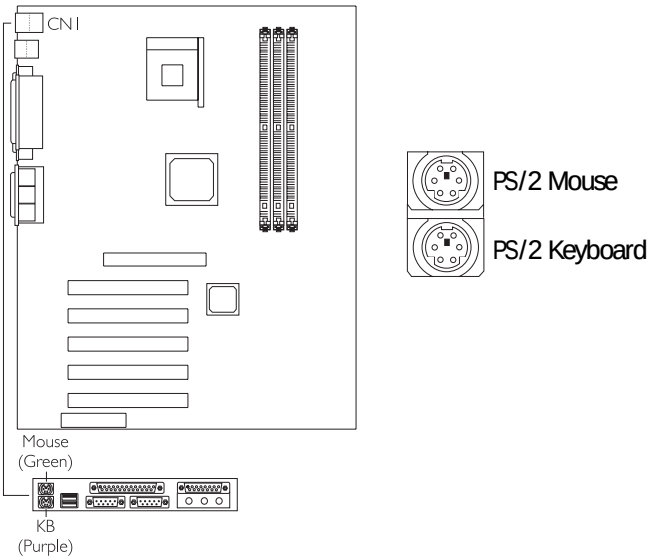
COM 1
Serial Port

COM 2
Serial Port

The system board is equipped with onboard serial ports (COM 1: CN3 and COM 2: CN5) - both in Teal/Turquoise color located at the ATX double deck ports of the board.

These ports are RS-232C asynchronous communication ports with 16C550A-compatible UARTs that can be used with modems, serial printers, remote display terminals, and other serial devices. You can set the serial ports' I/O address in the Integrated Peripherals submenu of the BIOS.

2.7.2 PS/2 Mouse and PS/2 Keyboard Ports

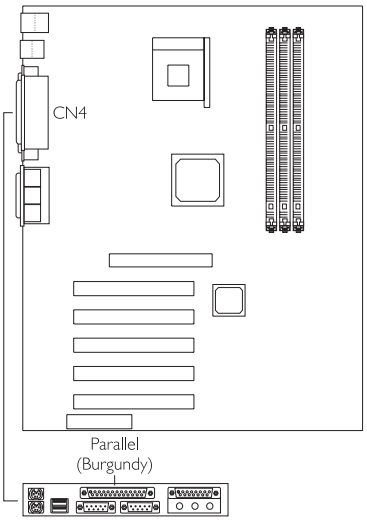


The system board is equipped with an onboard PS/2 mouse (Green) and PS/2 keyboard (Purple) ports - both at location CN1 of the ATX double deck ports of the system board. The PS/2 mouse port uses IRQ12. If a mouse is not connected to this port, the system will reserve IRQ12 for other expansion cards.

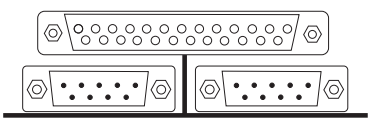
Warning:

Make sure to turn off your computer prior to connecting or disconnecting a mouse or keyboard. Failure to do so may damage the system board.

2.7.3 Parallel Port



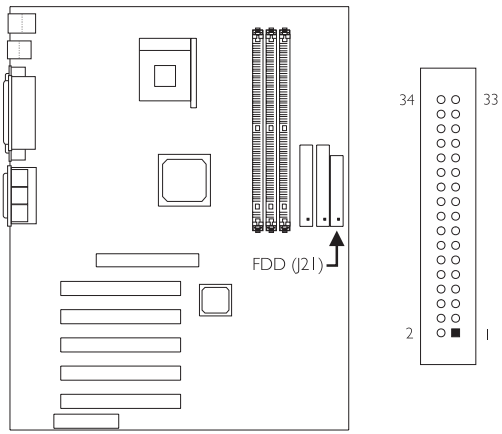
Parallel Port



The system board has a standard parallel port (CN4 - Burgundy) located at the ATX double deck ports of the board for interfacing your PC to a parallel printer. It supports SPP, ECP, EPP and PntMode modes. You can select the port's mode in the Integrated Peripherals submenu of the BIOS.

Setting	Function
SPP (Standard Parallel Port)	Allows normal speed operation but in one direction only.
ECP (Extended Capabilities Port)	Allows parallel port to operate in bidirectional mode and at a speed faster than the SPP's data transfer rate.
EPP (Enhanced Parallel Port)	Allows bidirectional parallel port operation at maximum speed.
PntMode	Allows parallel port to operate in bipolar mode.

2.7.4 Floppy Disk Drive Connector



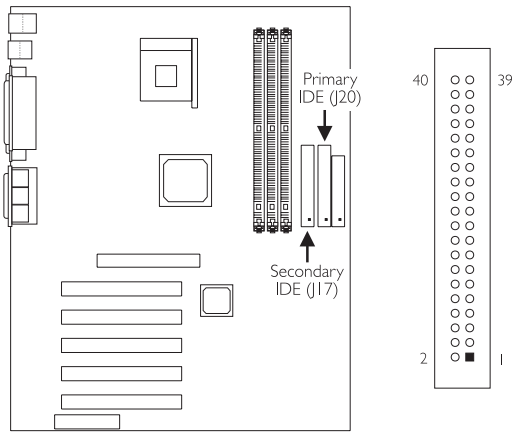
The system board is equipped with a shrouded floppy disk drive connector that supports two standard floppy disk drives. To prevent improper floppy cable installation, the shrouded floppy disk header has a keying mechanism. The 34-pin connector on the floppy cable can be placed into the header only if pin 1 of the connector is aligned with pin 1 of the header. You may enable or disable this function in the Integrated Peripherals submenu of the BIOS.

Connecting the Floppy Disk Drive Cable

1 Install the 34-pin header connector of the floppy disk drive cable into the shrouded floppy disk header (J21) on the system board. The colored edge of the ribbon should be aligned with pin 1 of J21.

2 Install the other 34-pin header connector(s) into the disk drive(s). Align the colored edge of the daisy chained ribbon cable with pin 1 of the drive edge connector(s). The end-most connector should be attached to the drive you want to designate as Drive A.

2.7.5 IDE Disk Drive Connector



The system board is equipped with two shrouded PCI IDE headers that will interface four Enhanced IDE (Integrated Drive Electronics) disk drives. To prevent improper IDE cable installation, each shrouded PCI IDE header has a keying mechanism. The 40-pin connector on the IDE cable can be placed into the header only if pin 1 of the connector is aligned with pin 1 of the header. You may enable or disable the onboard primary or secondary IDE controller in the Integrated Peripherals submenu of the BIOS.

Connecting the IDE Disk Drive Cable

1. If you are connecting two IDE drives, install the 40-pin connector of the IDE cable into the primary shrouded IDE header (J20). If you are adding a third or fourth IDE device, install the 40-pin connector of the other IDE cable into the secondary shrouded IDE header (J17).

2. Install the other 40-pin header connector(s) into the device with the colored edge of the ribbon cable aligned with pin 1 of the drive edge connector(s).

Note:
Refer to your disk drive user's manual for information about selecting proper drive switch settings.

Adding a Second IDE Disk Drive

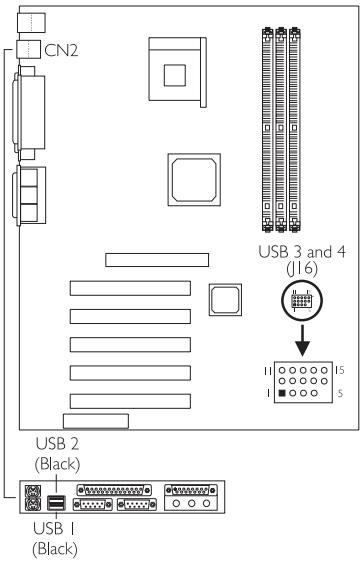
When using two IDE drives, one must be set as the master and the other as the slave. Follow the instructions provided by the drive manufacturer for setting the jumpers and/or switches on the drives.

The system board supports Enhanced IDE or ATA-2, ATA/33, ATA/66 or ATA/100 hard drives. We recommend that you use hard drives from the same manufacturer. In a few cases, drives from two different manufacturers will not function properly when used together. The problem lies in the hard drives, not the system board.

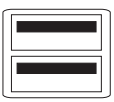
Important:

If you encountered problems while using an ATAPI CD-ROM drive that is set in Master mode, please set the CD-ROM drive to Slave mode. Some ATAPI CD-ROMs may not be recognized and cannot be used if incorrectly set in Master mode.

2.7.7 Universal Serial Bus Ports



Onboard USB Ports (CN2)



Additional USB Ports (J16)

Pin	Function	Pin	Function	Pin	Function
1	VCC	6	VCC	11	Ground
2	UP2-	7	UP3-	12	Ground
3	UP2+	8	UP3+	13	UP2+
4	Ground	9	Ground	14	UP2-
5	Key	10	Ground	15	VCC

The system board supports 4 USB ports. USB allows data exchange between your computer and a wide range of simultaneously accessible external Plug and Play peripherals. You must have the proper drivers installed in your operating system to use the USB ports. Refer to your operating system's manual or documentation.

Two onboard USB ports (CN2 - Black) are located at the ATX double deck ports of the board.

Depending on the type of USB port cable that you are using, the J16 connector on the system board allows you to connect 2 more optional USB ports. These optional USB ports, which are mounted on a card-edge bracket, will be provided as an option. If you wish to use the optional USB ports, install the card-edge bracket to the system chassis then insert the connector that is attached to the USB port cables to J16.

Insert the USB port cable connector to pins 1-10 if:

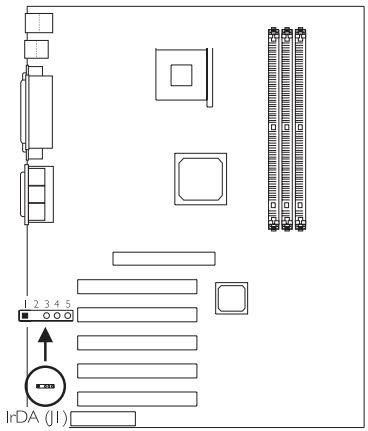
- One of the holes on the cable connector is plugged, meaning the cable connector has a keying mechanism.

Insert the USB port cable connector to pins 6-15 if:

- None of the holes on the cable connector is plugged, meaning the cable connector has no keying mechanism.

The system board supports the Wake-On-USB Keyboard function. This function allows you to use a USB keyboard to wake up a system that is in the S3 (STR - Suspend To RAM) state. If you want to use this function, you must set jumpers JP2 or JP5 pins 2 and 3 to On and set "USB KB Wake Up From S3" in the Power Management Setup submenu of the BIOS to Enabled. Refer to "Jumper Settings for Wake-On-USB Keyboard" in chapter 2 and "USB KB Wake-Up From S3" in the Power Management Setup section in chapter 3 for more information.

2.7.8 IrDA Connector



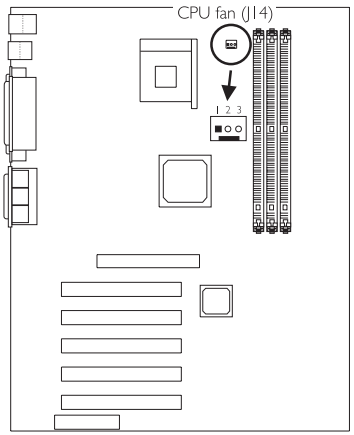
Pin	Function
1	VCC
2	N. C.
3	IRRX
4	Ground
5	IRTX

The system board is equipped with an IrDA connector for wireless connectivity between your computer and peripheral devices. The IRDA (Infrared Data Association) specification supports data transfers of 115K baud at a distance of 1 meter.

Connect your IrDA cable to connector J1 on the system board. Set "UART2 Mode Select" in the Integrated Peripherals submenu of the BIOS to the type of IrDA standard supported by your device. You must have the proper drivers installed in your operating system to use this connector. Refer to your operating system's manual or documentation.

Note:
The sequence of the pin functions on some IrDA cable may be reversed from the pin function defined on the system board. Make sure to connect the cable to the IrDA connector according to their pin functions.

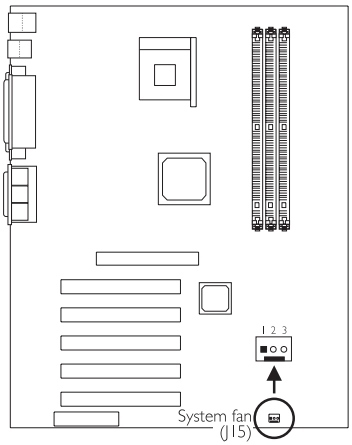
2.7.9 CPU Fan Connector



Pin	Function
1	Ground
2	Power
3	Sense

The processor must be kept cool by using a fan with heatsink. Connect the CPU fan to the 3-pin fan connector at location J14 on the system board. The system is capable of monitoring the speed of the CPU fan.

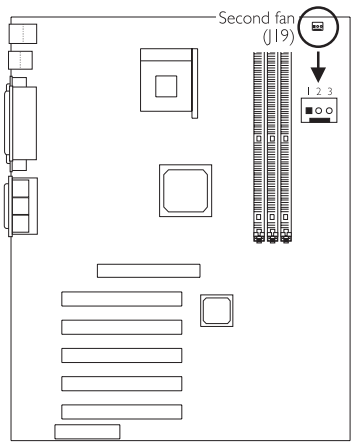
2.7.10 System Fan Connector



Pin	Function
1	Ground
2	On/Off
3	Sense

If you are installing a system fan in the system unit, connect the fan's connector to location J15 on the system board. The fan will provide adequate airflow throughout the chassis to prevent overheating the processor. The system is capable of monitoring and controlling the speed of the system fan. The system fan will automatically turn off once the system enters the Suspend mode.

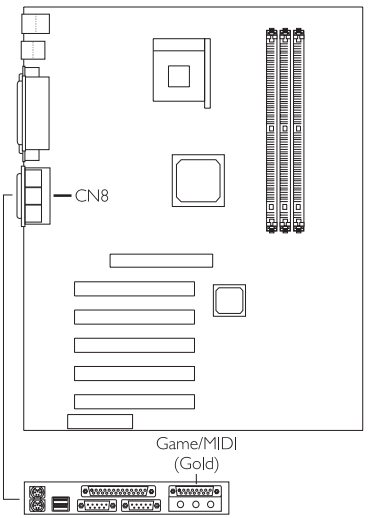
2.7.11 Second Fan Connector



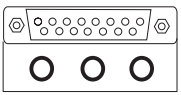
Pin	Function
1	Ground
2	On/Off
3	Sense

If you are installing a second fan in the system unit, connect the fan's connector to location J19 on the system board. The system is capable of monitoring and controlling the speed of the second fan. The second fan will automatically turn off once the system enters the Suspend mode.

2.7.12 Game/MIDI Port

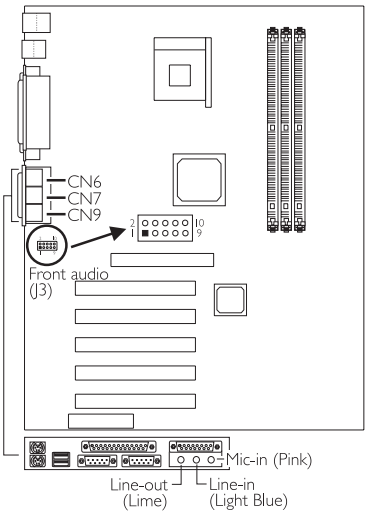


Game/MIDI Port

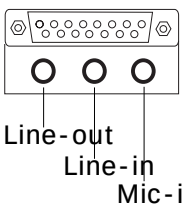


The Game/MIDI port is identical to that of a standard PC game adapter or game I/O port. Connect an analog joystick to the 15-pin D-sub connector (CN8 - Gold) located at the ATX double deck ports of the system board. This port works well with any application that is compatible with the standard PC joystick.

2.7.13 Audio Jacks



Onboard Audio Jacks



Additional Line-out/Mic-in (J3)

Pin	Function	Pin	Function
1	Mic+	2	Ground
3	N. C.	4	AuD_Vcc (Avcc)
5	AuD_R_Out	6	N. C.
7	N. C.	8	Key
9	AuD_L_Out	10	N. C.

Onboard Audio Jacks

The system board is equipped with 3 audio jacks. A jack is a one-hole connecting interface for inserting a plug.

Line-out Jack (CN6 - Lime)
This jack is used to connect external speakers for audio output from the system board.

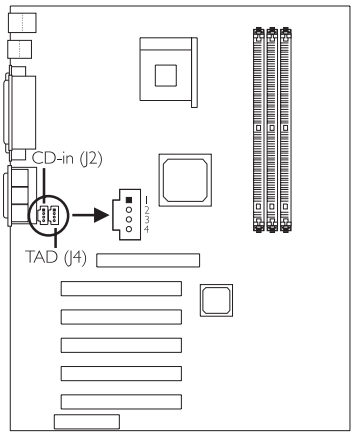
Line-in Jack (CN7 - Light Blue)
This jack can be connected to the line-out jack of any external audio devices such as Hi-fi set, CD player, AM/FM radio tuner, synthesizer, etc. Connect a stereo cable from the line-out jack of your external device to this line-in jack.

Mic-in Jack (CN9 - Pink)
Connect a microphone to the mic-in jack.

Additional Line-out/Mic-in (J3)

J3 provides you the option of connecting another line-out and mic-in jacks.

2.7.14 Internal Audio Connectors



CD-in

This connector is used to receive audio from a CD-ROM drive, TV tuner or MPEG card.

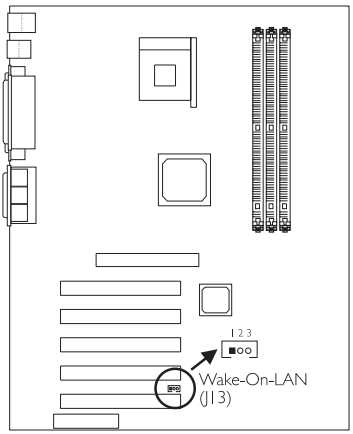
Pin	Function
1	Left audio channel
2	Ground
3	Ground
4	Right audio channel

TAD

TAD is a connector for telephony audio devices such as voice modem cards. By installing a PCI voice modem card that is also equipped with a TAD connector, connect one end of the cable (that came with the card) to the card's TAD connector and the other end to the TAD connector on the system board. The voice modem will interface with the onboard audio allowing voice to come from the external speaker.

Pin	Function
1	Modem-out (from modem)
2	Ground
3	Ground
4	Modem-in (to modem)

2.7.15 Wake-On-LAN Connector



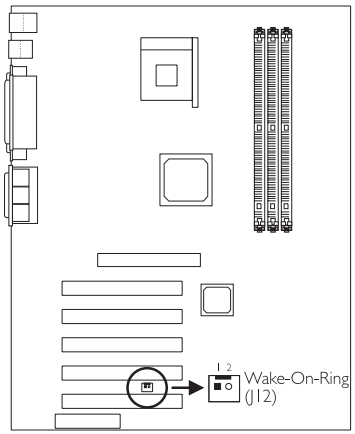
Pin	Function
1	WOL
2	Ground
3	+5VSB

The system board supports the Wake-On-LAN function. This function will allow the network to remotely power-on a Soft Power Down (Soft-Off) PC. However, if your system is in the Suspend mode, you can power-on the system only through an IRQ or DMA interrupt.

To use the Wake-On-LAN function, you must enable the "Resume on LAN" field in the Power Management Setup of the BIOS. Your LAN card package should include a cable. Connect one end of the cable to the wakeup header on the card and the other end to location J13 on the system board. The network will detect Magic Packet and assert a wakeup signal to power-up the system. Refer to the add-in card's manual for details. Note: Your LAN card must support the remote wake up function.

Important:
The 5VSB power source of your power supply must support ≥720mA.

2.7.16 Wake-On-Ring Connector



Pin	Function
1	Ground
2	RI#

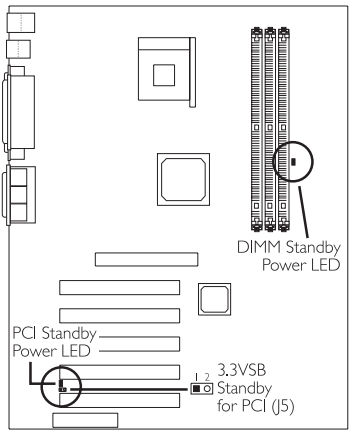
The Wake-On-Ring connector is used to connect to an internal modem card that has the same connector. It will allow the system that is in the Suspend mode or Soft Power Off mode to wake-up/ power-on to respond to calls coming through the internal modem card.

To use this function, connect one end of the cable (that came with the card) to the card's wake-on-ring connector and the other end to location J12 on the system board. You must also enable the "Resume on Ring" field in the Power Management Setup of the BIOS.

If you are using an external modem, the ring-on function will come through the serial port where the external modem is connected.

Important:
If you are using a modem add-in card, the 5VSB power source of your power supply must support ≥720mA.

2.7.17 DIMM and PCI Standby Power LEDs



DIMM Standby Power LED

This LED will turn red when the system's power is on or when it is in the Suspend state (Power On Suspend or Suspend to RAM). It will not light when the system is in the Soft-Off state.

PCI Standby Power LED

This LED will turn red when the system is in the power-on, Soft-Off or Suspend (Power On Suspend or Suspend to RAM) state.

3.3VSB Standby for PCI (Jumper J5)

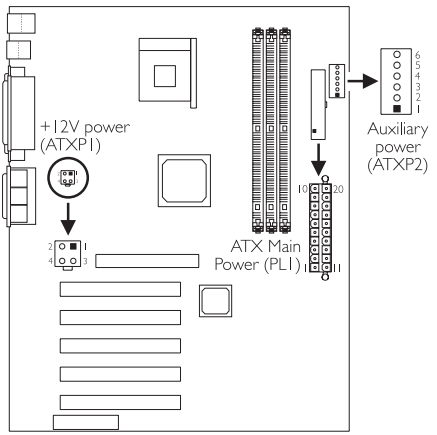
The default setting of jumper J5 is On. It provides 3.3VSB Standby power to the PCI slots. If you are using a PCI modem card that does not comply to the PCI 2.2 specification, please set this jumper to Off. The PCI Standby Power LED's light will subsequently turn off.

On: Default
3.3VSB Standby Power to
PCI slots - PCI 2.2 spec.

Off:
Non-PCI 2.2 spec.

Important:
Lighted LEDs serve as a reminder that you must power-off the system then turn off the power supply's switch or unplug the power cord prior to installing any memory modules or add-in cards.

2.7.18 Power Connectors



We recommend that you use a power supply that complies with the ATX12V Power Supply Design Guide Version 1.1. An ATX12V power supply has a standard 20-pin ATX main power connector, a 4-pin +12V power connector and a 6-pin auxiliary power connector that must be inserted onto PL1, ATXP1 and ATXP2 connectors respectively.

The 4-pin +12V power connector enables the delivery of more +12VDC current to the processor's Voltage Regulator Module (VRM).

The 6-pin auxiliary power connector provides additional current for the board's +3.3VDC and +5VDC. Using a power supply that does not have this connector will still provide power as long as the 20-pin ATX main power and 4-pin +12V power are connected.

The system board requires a minimum of 250 Watt power supply to operate. Your system configuration (amount of memory, add-in cards, peripherals, etc.) may exceed the minimum power requirement. To ensure that adequate power is provided, use a 300 Watt (or greater) power supply.

ATX Main Power Connector

Pin	Function	Pin	Function
1	3.3V	11	3.3V
2	3.3V	12	-12V
3	Ground	13	Ground
4	+5V	14	PS-ON
5	Ground	15	Ground
6	+5V	16	Ground
7	Ground	17	Ground
8	PW-OK	18	-5V
9	5VSB	19	+5V
10	+12V	20	+5V

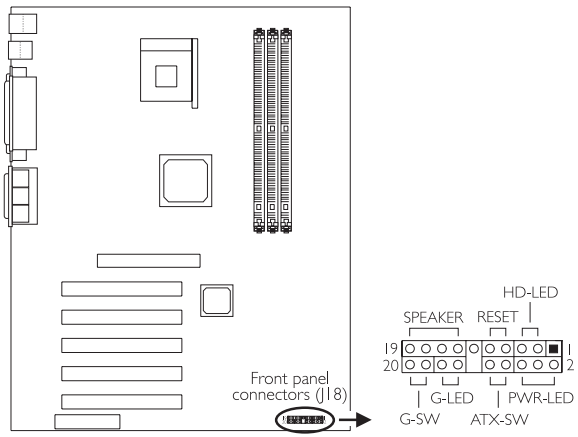
+12V Power Connector

Pin	Function
1	Ground
2	Ground
3	+12V
4	+12V

Auxiliary Power Connector

Pin	Function	Pin	Function
1	Ground	4	+3.3V
2	Ground	5	+3.3V
3	Ground	6	+5V

2.7.19 Front Panel Connectors



HD-LED: Primary/Secondary IDE LED

This LED will light when the hard drive is being accessed.

G-LED: Green LED

This LED will not light when the system's power is on or when the system is in the S3 (STR - Suspend To RAM) state. It will blink every second when the system is in the S1 (POS - Power On Suspend) state.

ATX-SW: ATX Power Switch

Depending on the setting in the BIOS setup, this switch is a "dual function power button" that will allow your system to enter the Soft-Off or Suspend mode. Refer to "Soft-Off By PWR-BTTN" in the Power Management Setup (Chapter 3).

G-SW: Green Switch

This switch will allow your system to enter the Suspend mode.

RESET: Reset Switch

This switch allows you to reboot without having to power off the system thus prolonging the life of the power supply or system.

SPEAKER: Speaker Connector

This connects to the speaker installed in the system chassis.

PWR-LED: Power/Standby LED

When the system's power is on, this LED will light. When the system is in the S1 (POS - Power On Suspend) state, it will blink every second. When the system is in the S3 (STR - Suspend To RAM) state, it will blink every 4 seconds.

Note:

If a system did not boot-up and the Power/Standby LED did not light after it was powered-on, it may indicate that the CPU or memory module was not installed properly. Please make sure they are properly inserted into their corresponding socket.

	Pin	Pin Assignment
HD-LED (Primary/Secondary IDE LED)	3 5	HDD LED Power HDD
G-LED (Green LED)	14 16	Green LED Power Ground
ATX-SW (ATX power switch)	8 10	PWRBT+ PWRBT-
G-SW (Green switch)	18 20	Ground SMI
RESET (Reset switch)	7 9	Ground H/W Reset
SPEAKER (Speaker connector)	13 15 17 19	Speaker Data N. C. Ground Speaker Power
PWR-LED (Power/Standby LED)	2 4 6	LED Power (+) LED Power (+) LED Power (-) or Standby Signal

Chapter 3 - Award BIOS Setup Utility

3.1 The Basic Input/Output System

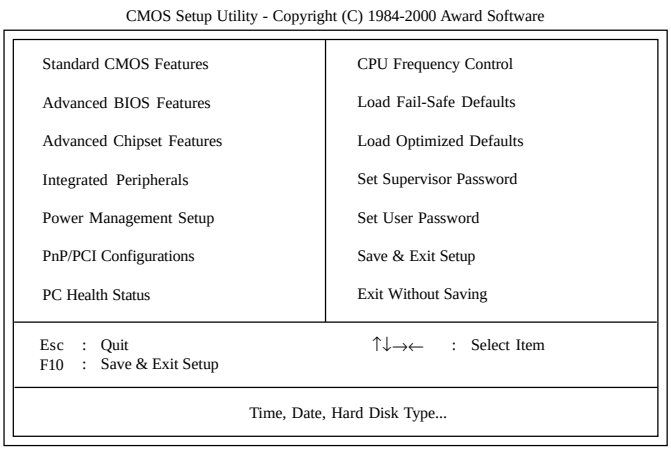
The Basic Input/Output System (BIOS) is a program that takes care of the basic level of communication between the processor and peripherals. In addition, the BIOS also contains codes for various advanced features found in this system board. This chapter explains the Setup Utility for the Award BIOS.

After you power up the system, the BIOS message appears on the screen and the memory count begins. After the memory test, the following message will appear on the screen:

Press DEL to enter setup

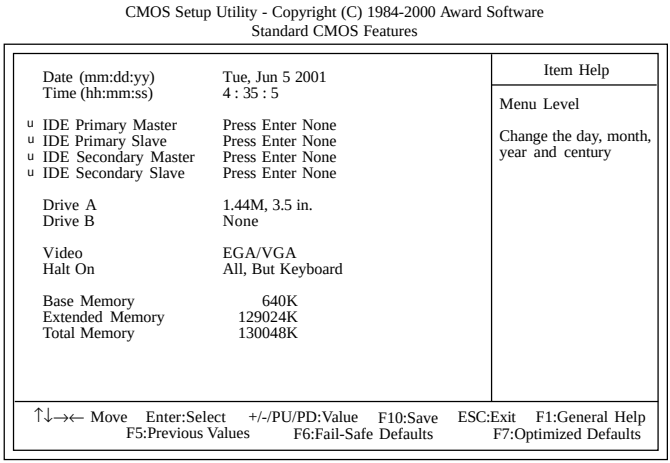
If the message disappears before you respond, restart the system or press the “Reset” button. You may also restart the system by pressing the <Ctrl> <Alt> and <Del> keys simultaneously.

When you press <Del>, the main menu screen will appear.



3.1.1 Standard CMOS Features

Use the arrow keys to highlight “Standard CMOS Features” and press <Enter>. A screen similar to the one on the next page will appear.


CMOS Setup Utility - Copyright (C) 1984-2000 Award Software
Standard CMOS Features
Date (mm:dd:yy) Tue, Jun 5 2001
Time (hh:mm:ss) 4 : 35 : 5
IDE Primary Master Press Enter None
IDE Primary Slave Press Enter None
IDE Secondary Master Press Enter None
IDE Secondary Slave Press Enter None
Drive A 1.44M, 3.5 in.
Drive B None
Video EGA/VGA
Halt On All, But Keyboard
Base Memory 640K
Extended Memory 129024K
Total Memory 130048K
Item Help
Menu Level
Change the day, month, year and century
↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

The settings on the screen are for reference only. Your version may not be identical to this one.

Date

The date format is <day>, <month>, <date>, <year>. Day displays a day, from Sunday to Saturday. Month displays the month, from January to December. Date displays the date, from 1 to 31. Year displays the year, from 1994 to 2079.

Time

The time format is <hour>, <minute>, <second>. The time is based on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00. Hour displays hours from 00 to 23. Minute displays minutes from 00 to 59. Second displays seconds from 00 to 59.

IDE Primary Master, IDE Primary Slave, IDE Secondary Master and IDE Secondary Slave

Move the cursor to the “IDE Primary Master”, “IDE Primary Slave”, “IDE Secondary Master” or “IDE Secondary Slave” field, then press <Enter>.

IDE HDD Auto Detection

Detects the parameters of the drive. The parameters will automatically be shown on the screen.

IDE Primary/Secondary Master/Slave

If you wish to define your own drive type manually, select "Manual". The drive type information should be included in the documentation from your hard disk vendor. If you select "Auto", the BIOS will auto-detect the HDD & CD-ROM drive at the POST stage and show the IDE for the HDD & CD-ROM drive. If a hard disk has not been installed, select "None".

Capacity

Displays the approximate capacity of the disk drive. Usually the size is slightly greater than the size of a formatted disk given by a disk checking program.

Access Mode

For hard drives larger than 528MB, you would typically select the LBA type. Certain operating systems require that you select Normal or Large. Please check your operating system's manual or Help desk on which one to select.

Drive A and Drive B

These fields identify the types of floppy disk drives installed.

None	No floppy drive is installed
360K, 5.25 in.	5-1/4 in. standard drive; 360KB capacity
1.2M, 5.25 in.	5-1/4 in. AT-type high-density drive; 1.2MB capacity
720K, 3.5 in.	3-1/2 in. double-sided drive; 720KB capacity
1.44M, 3.5 in.	3-1/2 in. double-sided drive; 1.44MB capacity
2.88M, 3.5 in.	3-1/2 in. double-sided drive; 2.88MB capacity

Video

This field selects the type of video adapter used for the primary system monitor. Although secondary monitors are supported, you do not have to select the type. The default setting is EGA/VGA.

EGA/VGA	Enhanced Graphics Adapter/Video Graphics Array. For EGA, VGA, SVGA and PGA monitor adapters.
CGA 40	Color Graphics Adapter. Power up in 40-column mode.
CGA 80	Color Graphics Adapter. Power up in 80-column mode.
Mono	Monochrome adapter. Includes high resolution monochrome adapters.

Halt On

This field determines whether the system will stop if an error is detected during power up.

No Errors	The system boot will not stop for any errors detected.
All Errors	The system boot will stop whenever the BIOS detects a non-fatal error.
All, But Keyboard	The system boot will not stop for a keyboard error; it will stop for all other errors.
All, But Diskette	The system boot will not stop for a disk error; it will stop for all other errors.
All, But Disk/Key	The system boot will not stop for a disk or keyboard error; it will stop for all other errors.

Base Memory

Displays the amount of base (or conventional) memory installed in the system. The value of the base memory is typically 512K for systems with 512K memory installed on the motherboard or 640K for systems with 640K or more memory installed on the motherboard.

Extended Memory

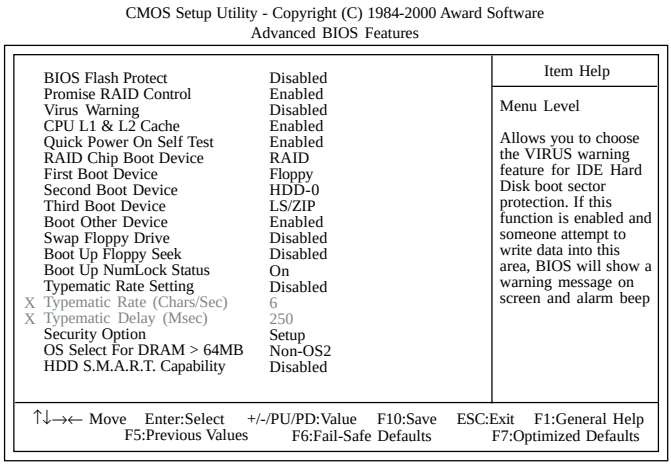
Displays the amount of extended memory detected during boot-up.

Total Memory

Displays the total memory available in the system.

3.1.2 Advanced BIOS Features

The Advanced BIOS Features allows you to configure your system for basic operation. Some entries are defaults required by the system board, while others, if enabled, will improve the performance of your system or let you set some features according to your preference.


CMOS Setup Utility - Copyright (C) 1984-2000 Award Software
Advanced BIOS Features
BIOS Flash Protect Disabled
Promise RAID Control Enabled
Virus Warning Disabled
CPU L1 & L2 Cache Enabled
Quick Power On Self Test Enabled
RAID Chip Boot Device RAID
First Boot Device Floppy
Second Boot Device HDD-0
Third Boot Device LS/ZIP
Boot Other Device Enabled
Swap Floppy Drive Disabled
Boot Up Floppy Seek Disabled
Boot Up NumLock Status On
Typematic Rate Setting Disabled
X Typematic Rate (Chars/Sec) 6
X Typematic Delay (Msec) 250
Security Option Setup
OS Select For DRAM > 64MB Non-OS2
HDD S.M.A.R.T. Capability Disabled
Item Help
Menu Level
Allows you to choose the VIRUS warning feature for IDE Hard Disk boot sector protection. If this function is enabled and someone attempt to write data into this area, BIOS will show a warning message on screen and alarm beep
↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

The settings on the screen are for reference only. Your version may not be identical to this one.

BIOS Flash Protect

Enabled This option will protect the system from unnecessary updating or flashing of the BIOS. When enabled, it secures the BIOS therefore any updates to the BIOS will not take effect.

Disabled Disables the "BIOS flash protect" function, allowing you to update or flash the BIOS any time needed.

Promise RAID Control

By default, the Promise RAID controller is enabled. If you are not using this function, set this field to Disabled. The IRQ previously occupied by the controller will be available for other devices.

Virus Warning

This field protects the boot sector and partition table of your hard disk drive. When this field is enabled, the Award BIOS will monitor the boot

sector and partition table of the hard disk drive. If an attempt is made to write to the boot sector or partition table of the hard disk drive, the BIOS will halt the system and an error message will appear.

After seeing the error message, if necessary, you will be able to run an anti-virus program to locate and remove the problem before any damage is done.

Many disk diagnostic programs which attempt to access the boot sector table will cause the warning message to appear. If you are running such a program, we recommend that you first disable this field. Also, disable this field if you are installing or running certain operating systems like Windows® 98/2000/ME or the operating system may not install nor work.

CPU L1 & L2 Cache

This field speeds up the memory access. The default value is enabled.

Quick Power On Self Test

This field speeds up Power On Self Test (POST) after you power on the system. When Enabled, the BIOS will shorten or skip some check items during POST.

RAID Chip Boot Device

If you want the system to boot from a drive that is connected to the RAID IDE connector or SCSI add-in card, you must first select "SCSI" in the "First Boot Device" field.

If there are drives connected to both the RAID IDE connector and SCSI add-in card, you must then select which drive you want the system to boot from.

RAID	The drive is connected to the RAID IDE connector that is on the system board.
SCSI	The drive is connected to the SCSI add-in card that is installed in a PCI slot.

If the drive is connected to either one of them only, you don't need to particularly select an option in this field because the system will automatically detect for the existing drive.

First Boot Device, Second Boot Device, Third Boot Device and Boot Other Device

Select the drive to boot first, second and third in the “First Boot Device” “Second Boot Device” and “Third Boot Device” fields respectively. The BIOS will boot the operating system according to the sequence of the drive selected. Set “Boot Other Device” to Enabled if you wish to boot from another device.

Swap Floppy Drive

When this field is enabled and the system is booting from the floppy drive, the system will boot from drive B instead of drive A. When this field is disabled and the system is booting from the floppy drive, the system will boot from drive A. You must have two floppy drives to use this function.

Boot Up Floppy Seek

When enabled, the BIOS will check whether the floppy disk drive installed is 40 or 80 tracks. Note that the BIOS cannot distinguish between 720K, 1.2M, 1.44M and 2.88M drive types as they are all 80 tracks. When disabled, the BIOS will not search for the type of floppy disk drive by track number. Note that there will not be any warning message if the drive installed is 360KB.

Boot Up NumLock Status

This allows you to determine the default state of the numeric keypad. By default, the system boots up with NumLock on wherein the function of the numeric keypad is the number keys. When set to Off, the function of the numeric keypad is the arrow keys.

Typematic Rate Setting

Disabled Continually holding down a key on your keyboard will cause the BIOS to report that the key is down.

Enabled The BIOS will not only report that the key is down, but will first wait for a moment, and, if the key is still down, it will begin to report that the key has been depressed repeatedly. For example, you would use such a feature to accelerate cursor movements with the arrow keys. You can then select the typematic rate and typematic delay in the "Typematic Rate (Chars/Sec)" and "Typematic Delay (Msec)" fields below.

Typematic Rate (Chars/Sec)

This field allows you to select the rate at which the keys are accelerated.

Typematic Delay (Msec)

This field allows you to select the delay between when the key was first depressed and when the acceleration begins.

Security Option

This field determines when the system will prompt for the password - everytime the system boots or only when you enter the BIOS setup. Set the password in the Set Supervisor/User Password submenu.

System The system will not boot and access to Setup will be denied unless the correct password is entered at the prompt.

Setup The system will boot, but access to Setup will be denied unless the correct password is entered at the prompt.

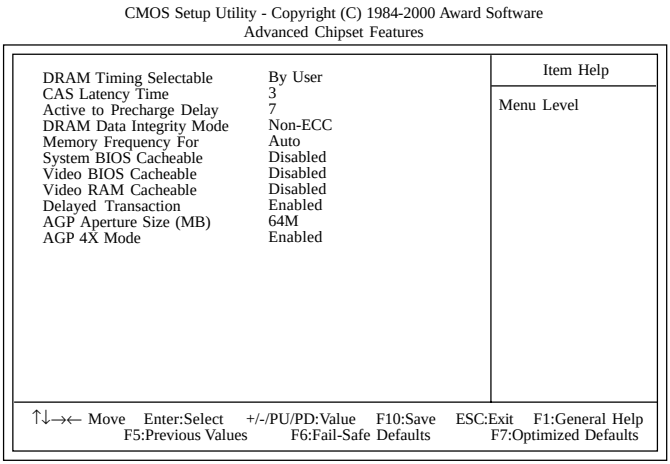
OS Select for DRAM > 64MB

This field allows you to access the memory that is over 64MB in OS/2. The options are: Non-OS2 and OS2.

HDD S.M.A.R.T. Capability

The system board supports SMART (Self-Monitoring, Analysis and Reporting Technology) hard drives. SMART is a reliability prediction technology for ATA/IDE and SCSI drives. The drive will provide sufficient notice to the system or user to backup data prior to the drive's failure. The default is Disabled. If you are using hard drives that support S.M.A.R.T., set this field to Enabled. SMART is supported in ATA/33 or later hard drives.

3.1.3 Advanced Chipset Features


CMOS Setup Utility - Copyright (C) 1984-2000 Award Software
Advanced Chipset Features
DRAM Timing Selectable By User
CAS Latency Time 3
Active to Precharge Delay 7
DRAM Data Integrity Mode Non-ECC
Memory Frequency For Auto
System BIOS Cacheable Disabled
Video BIOS Cacheable Disabled
Video RAM Cacheable Disabled
Delayed Transaction Enabled
AGP Aperture Size (MB) 64M
AGP 4X Mode Enabled
Item Help
Menu Level
↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

The settings on the screen are for reference only. Your version may not be identical to this one.

This section gives you functions to configure the system based on the specific features of the chipset. The chipset manages bus speeds and access to system memory resources. These items should not be altered unless necessary. The default settings have been chosen because they provide the best operating conditions for your system. The only time you might consider making any changes would be if you discovered some incompatibility or that data was being lost while using your system.

DRAM Timing Selectable

This field is used to select the timing of the DRAM.

By SPD The EEPROM on a DIMM has SPD (Serial Presence Detect) data structure that stores information about the module such as the memory type, memory size, memory speed, etc. When this option is selected, the system will run according to the information in the EEPROM.

By User It allows you to configure the 2 fields that follow (CAS Latency Time and Active to Precharge Delay). The system will run according to the settings in these two fields.

CAS Latency Time

This field is used to select the local memory clock periods.

Active to Precharge Delay

The options are 5, 6 and 7.

DRAM Data Integrity Mode

If you are using DIMMs that support the ECC (Error Checking and Correction) function, set this field to ECC. It will allow the system to recover from memory failure. It detects single-bit and multiple-bit errors, then automatically corrects single-bit error.

Memory Frequency For

This field is used to select the memory clock speed of the DIMM.

System BIOS Cacheable

When this field is enabled, accesses to the system BIOS ROM addressed at F0000H-FFFFFH are cached, provided that the cache controller is enabled. The larger the range of the Cache RAM, the higher the efficiency of the system.

Video BIOS Cacheable

As with caching the system BIOS, enabling the Video BIOS cache will allow access to video BIOS addresssed at C0000H to C7FFFH to be cached, if the cache controller is also enabled. The larger the range of the Cache RAM, the faster the video performance.

Video RAM Cacheable

When enabled, it allows the video RAM to be cacheable thus providing better video performance. If your graphics card does not support this function, leave this field in its default setting - Disabled.

Delayed Transaction

When enabled, this function frees up the PCI bus for other PCI masters during the PCI-to-ISA transactions. This allows PCI and ISA buses to be used more efficiently and prevents degradation of performance on the PCI bus when ISA accesses are made.

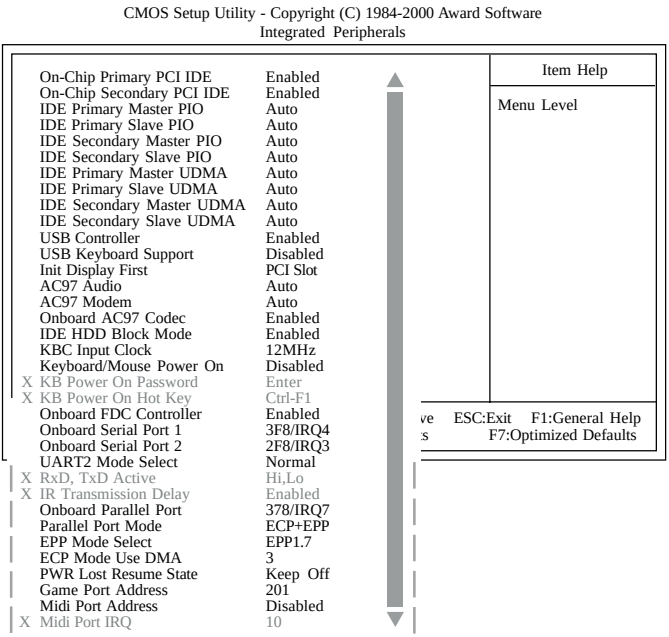
AGP Aperture Size (MB)

This field is relevant to the memory-mapped graphics data of the AGP card installed in your system. Leave this in its default setting, which is 64.

AGP 4X Mode

This field is used to enable the AGP 4x interface which transfers video data at 1066MB/sec. bandwidth thus delivering faster and better graphics to your PC. Make sure your graphics card supports the AGP 4x mode.

3.1.4 Integrated Peripherals


CMOS Setup Utility - Copyright (C) 1984-2000 Award Software
Integrated Peripherals
On-Chip Primary PCI IDE Enabled
On-Chip Secondary PCI IDE Enabled
IDE Primary Master PIO Auto
IDE Primary Slave PIO Auto
IDE Secondary Master PIO Auto
IDE Secondary Slave PIO Auto
IDE Primary Master UDMA Auto
IDE Primary Slave UDMA Auto
IDE Secondary Master UDMA Auto
IDE Secondary Slave UDMA Auto
USB Controller Enabled
USB Keyboard Support Disabled
Init Display First PCI Slot
AC97 Audio Auto
AC97 Modem Auto
Onboard AC97 Codec Enabled
IDE HDD Block Mode Enabled
KBC Input Clock 12MHz
Keyboard/Mouse Power On Disabled
X KB Power On Password Enter
X KB Power On Hot Key Ctrl-F1
Onboard FDC Controller Enabled
Onboard Serial Port 1 3F8/IRQ4
Onboard Serial Port 2 2F8/IRQ3
UART2 Mode Select Normal
X RxD, TxD Active Hi,Lo
X IR Transmission Delay Enabled
Onboard Parallel Port 378/IRQ7
Parallel Port Mode ECP+EPP
EPP Mode Select EPP1.7
ECP Mode Use DMA 3
PWR Lost Resume State Keep Off
Game Port Address 201
Midi Port Address Disabled
X Midi Port IRQ 10
Item Help
Menu Level
ESC:Exit F1:General Help
F7:Optimized Defaults

The screen above list all the fields available in the Integrated Peripherals submenu, for ease of reference in this manual. In the actual CMOS setup, you have to use the scroll bar to view the fields. The settings on the screen are for reference only. Your version may not be identical to this one.

On-Chip Primary PCI IDE and On-Chip Secondary PCI IDE

These fields allow you to enable or disable the primary and secondary IDE controller. The default is Enabled. Select Disabled if you want to add a different hard drive controller.

IDE Primary Master/Slave PIO and IDE Secondary Master/Slave PIO

PIO means Programmed Input/Output. Rather than have the BIOS issue a series of commands to effect a transfer to or from the disk drive, PIO allows the BIOS to tell the controller what it wants and then let the controller and the CPU perform the complete task by themselves. Your system supports five modes, 0 (default) to 4, which primarily differ in timing. When Auto is selected, the BIOS will select the best available mode after checking your drive.

Auto The BIOS will automatically set the system according to your hard disk drive's timing.

Mode 0-4 You can select a mode that matches your hard disk drive's timing. Caution: Do not use the wrong setting or you will have drive errors.

IDE Primary Master/Slave UDMA and IDE Secondary Master/Slave UDMA

These fields allow you to set the Ultra DMA in use. When Auto is selected, the BIOS will select the best available option after checking your hard drive or CD-ROM.

Auto The BIOS will automatically detect the settings for you.

Disabled The BIOS will not detect these categories.

USB Controller

We recommend that you leave this field in its default setting - Enabled.

USB Keyboard Support

By default, USB Keyboard Support is Disabled. However, if you are using a USB keyboard under DOS, make sure to enable this function.

Init Display First

This field is used to select whether to initialize the AGP or PCI first when the system boots.

AGP When the system boots, it will first initialize the AGP.

PCI Slot When the system boots, it will first initialize PCI.

AC97 Audio

Auto Select this option when using the onboard audio codec, primary or secondary audio riser card, or audio/modem riser card.

Disabled Select this option when using a PCI sound card.

AC97 Modem

Auto Select this option when using a primary or secondary modem riser card, or audio/modem riser card.

Disabled Select this option when using a PCI modem card.

Onboard AC97 Codec

Enabled This option is used to enable the onboard AC97 codec.

Disabled This option is used to disable the onboard AC97 codec. Disable the onboard AC97 codec when using a 6-channel audio CNR card or an audio PCI card.

IDE HDD Block Mode

Enabled The IDE HDD uses the block mode. The system BIOS will check the hard disk drive for the maximum block size the system can transfer. The block size will depend on the type of hard disk drive.

Disabled The IDE HDD uses the standard mode.

KBC Input Clock

This is used to select the input clock of your keyboard. The options are: 8MHz and 12MHz. The default is 12MHz.

Keyboard/Mouse Power On

This field allows you to use the keyboard or PS/2 mouse to power-on the system. To use this function, make sure JP1 is set to 2-3 On - the Wake-On-Keyboard/Mouse function enabled. Refer to "Jumper Settings for Wake-On-Keyboard/Wake-On-Mouse" in chapter 2 for more information.

Disabled Default setting.

Warning:

If JP1 was previously enabled with a password set in the "KB Power On Password" field, and now you wish to disable the keyboard password function, make sure to set this field to disabled prior to setting JP1 to disabled (1-2 On). You will not be able to boot up the system if you fail to do so.

Password When this option is selected, move the cursor to the "KB Power On Password" field and press <Enter>. Enter your password. You can enter up to 5 characters. Type in exactly the same password to confirm, then press <Enter>.

Important:

The power button will not function once a keyboard password has been set in the "KB Power On Password" field. You must type the correct password to power-on the system. If you forgot the password, power-off the system and remove the battery. Wait for a few seconds and install it back before powering-on the system.

Hot Key When this option is selected, move the cursor to the "KB Power On Hot Key" field to select a function key you would like to use to power-on the system. The options are from Ctrl-F1 to Ctrl-F12.

Mouse Left When this option is selected, double-click the left button of the mouse to power-on the system.

Mouse Right When this option is selected, double-click the right button of the mouse to power-on the system.

Any Key Press any key to power-on the system.

Keyboard 98 When this option is selected, press the "wake up" key of the Windows® 98 compatible keyboard to power-on the system.

Onboard FDC Controller

Enabled Enables the onboard floppy disk controller.

Disabled Disables the onboard floppy disk controller.

Onboard Serial Port 1 and Onboard Serial Port 2

Auto The system will automatically select an I/O address for the onboard serial port 1 and serial port 2.

3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4, 2E8/IRQ3 Allows you to manually select an I/O address for the onboard serial port 1 and serial port 2.

Disabled Disables the onboard serial port 1 and/or serial port 2.

UART2 Mode Select

The system board supports IrDA function for wireless connectivity between your computer and peripheral devices. You may not use IrDA (J1) and the COM 2 serial port (CN5) at the same time. If you are using the COM 2 serial port, make sure this field is set to Normal.

To use the IrDA function, follow the steps below.

1. Connect your IrDA cable to connector J1 on the system board.
2. Set the "UART2 Mode Select" field to the type of IrDA standard supported by your IrDA peripheral/device (IrDA or ASKIR). For better transmission of data, your IrDA peripheral device must be within a 30° angle and within a distance of 1 meter.
3. Set the "RxD, TxD Active" and "IR Transmission Delay" fields appropriately.

RxD, TxD Active

The options are Hi, Lo; Lo, Hi; Lo, Lo; and Hi, Hi.

IR Transmission Delay

If this field is Enabled, transmission of data will be slower. This is recommended when you encounter transmission problem with your device. The options are: Enabled and Disabled.

Onboard Parallel Port

378/IRQ7, 3BC/IRQ7, 278/IRQ5 Selects the I/O address and IRQ for the onboard parallel port.
Disabled Disables the onboard parallel port.

Parallel Port Mode

The options are SPP, EPP, ECP, ECP+EPP and PntMode. These apply to a standard specification and will depend on the type and speed of your device. Refer to your peripheral's manual for the best option.

SPP
Allows normal speed operation but in one direction only.

ECP (Extended Capabilities Port)
Allows parallel port to operate in bidirectional mode and at a speed faster than the normal mode's data transfer rate.

EPP (Enhanced Parallel Port)
Allows bidirectional parallel port operation at maximum speed.

PntMode
Allows parallel port to operate in bipolar mode.

If you selected EPP, the "EPP Mode Select" field is configurable. If you selected ECP, the "ECP Mode Use DMA" field is configurable. If you selected ECP+EPP, both "EPP Mode Select" and "ECP Mode Use DMA" are configurable.

EPP Mode Select

The options are EPP1.9 and EPP1.7. Default setting: EPP1.7.

ECP Mode Use DMA

This is used to select a DMA channel for the parallel port. The options are 1 and 3. Default setting: 3.

PWR Lost Resume State

Keep Off	When power returns after an AC power failure, the system's power is off. You must press the Power button to power-on the system.
Turn On	When power returns after an AC power failure, the system will automatically power-on.
Last State	When power returns after an AC power failure, the system will return to the state where you left off before power failure occurs. If the system's power is off when AC power failure occurs, it will remain off when power returns. If the system's power is on when AC power failure occurs, the system will power-on when power returns.

Game Port Address

This field is used to select the game port's address. The options are 201, 209 and Disabled.

Midi Port Address

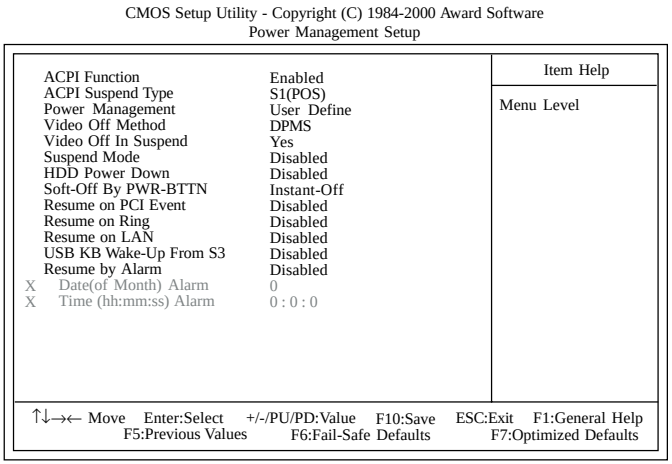
This field is used to select the midi port's address. The options are 290, 292 and Disabled. If you have selected the midi port's address, you may select its IRQ in the "Midi Port IRQ" field.

Midi Port IRQ

This field is used to select the midi port's IRQ. The options are 5 and 10.

3.1.5 Power Management Setup

The Power Management Setup allows you to configure your system to most effectively save energy.


CMOS Setup Utility - Copyright (C) 1984-2000 Award Software
Power Management Setup
ACPI Function Enabled
ACPI Suspend Type S1(POS)
Power Management User Define
Video Off Method DPMS
Video Off In Suspend Yes
Suspend Mode Disabled
HDD Power Down Disabled
Soft-Off By PWR-BTTN Instant-Off
Resume on PCI Event Disabled
Resume on Ring Disabled
Resume on LAN Disabled
USB KB Wake-Up From S3 Disabled
Resume by Alarm Disabled
X Date(of Month) Alarm 0
X Time (hh:mm:ss) Alarm 0 : 0 : 0
Item Help
Menu Level
↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

The settings on the screen are for reference only. Your version may not be identical to this one.

ACPI Function

This function should be enabled only in operating systems that support ACPI. Currently, only Windows® 98/2000/ME supports this function. When the system is in Windows® 98/2000/ME and this field is enabled, the system will ignore the settings in the "Suspend Mode" and "HDD Power Down" fields. If you want to use the Suspend to RAM function, make sure this field is enabled then select "S3(STR)" in the field below.

ACPI Suspend Type

This field is used to select the type of Suspend mode.

S1(POS)	Enables the Power On Suspend function.
S3(STR)	Enables the Suspend to RAM function. Refer to "Using the Suspend to RAM Function" in appendix A for more information.

Power Management

This field allows you to select the type (or degree) of power saving by changing the length of idle time that elapses before the Suspend mode and HDD Power Down fields are activated.

Min Saving	Minimum power saving time for the Suspend Mode and HDD Power Down = 1 hr.
Max Saving	Maximum power saving time for the. Suspend Mode and HDD Power Down = 1 min.
User Define	Allows you to set the power saving time in the "Suspend Mode" and "HDD Power Down" fields.

Video Off Method

This determines the manner in which the monitor is blanked.

V/H SYNC + Blank	This selection will cause the system to turn off the vertical and horizontal synchronization ports and write blanks to the video buffer.
Blank Screen	This option only writes blanks to the video buffer.
DPMS	Initializes display power management signaling. Use this option if your video board supports it.

Video Off In Suspend

This field is used to activate the video off feature when the system enters the Suspend mode. The options are Yes and No.

Suspend Mode

This is selectable only when the Power Management field is set to User Define. When the system enters the Suspend mode according to the power saving time selected, the CPU and onboard peripherals will be shut off.

HDD Power Down

This is selectable only when the Power Management field is set to User Define. When the system enters the HDD Power Down mode according to the power saving time selected, the hard disk drive will be powered down while all other devices remain active.

Soft-Off by PWR-BTTN

This field allows you to select the method of powering off your system.

Hold 4 Sec. Regardless of whether the Power Management function is enabled or disabled, if the power button is pushed and released in less than 4 sec, the system enters the Suspend mode. The purpose of this function is to prevent the system from powering off in case you accidentally "hit" or pushed the power button. Push and release again in less than 4 sec to restore. Pushing the power button for more than 4 seconds will power off the system.

Instant-Off Pressing and then releasing the power button at once will immediately power off your system.

Resume on PCI Event

Enabled Access to a PCI card such as a modem or LAN card will cause the system to wake up. The PCI card must support the wake up function.

Disabled The system will not wake up despite access to the PCI card.

Resume On Ring

Set this field to Enabled to use the modem ring-on function. This will allow your system to power-on to respond to calls coming through an external or internal modem. Refer to "Wake-On-Ring Connector" in chapter 2 for more information.

Resume On LAN

If you are using a LAN card that supports the remote wake up function, set this field to Enabled. The will allow the network to remotely wake up a Soft Power Down (Soft-Off) PC. However, if your system is in the Suspend mode, you can wake up the system only through an IRQ or DMA interrupt. Refer to "Wake-On-LAN Connector" in chapter 2 for more information.

USB KB Wake-Up From S3

Set this field to Enabled to use the Wake-On-USB Keyboard function. This function allows you to use a USB keyboard to wake up a system that is in the S3 (STR - Suspend To RAM) state. Refer to "Jumper Settings for Wake-On-USB Keyboard" in chapter 2 for more information.

Resume By Alarm

Enabled When Enabled, you can set the date and time you would like the Soft Power Down (Soft-Off) PC to power-on in the "Date (of Month) Alarm" and "Time (hh:mm:ss) Alarm" fields. However, if the system is being accessed by incoming calls or the network (Resume On Ring/LAN) prior to the date and time set in these fields, the system will give priority to the incoming calls or network.

Disabled Disables the automatic power-on function. (default)

Date (of Month) Alarm

0 The system will power-on everyday according to the time set in the "Time (hh:mm:ss) Alarm" field.

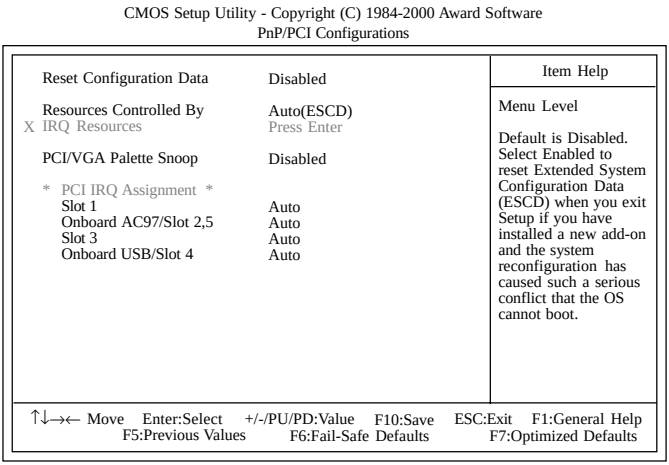
1-31 Select a date you would like the system to power-on. The system will power-on on the set date, and time set in the "Time (hh:mm:ss) Alarm" field.

Time (hh:mm:ss) Alarm

This is used to set the time you would like the system to power-on. If you want the system to power-on everyday as set in the "Date (of Month) Alarm" field, the time set in this field must be later than the time of the RTC set in the Standard CMOS Features submenu.

3.1.6 PnP/PCI Configurations

This section describes configuring the PCI bus system. It covers some very technical items and it is strongly recommended that only experienced users should make any changes to the default settings.


CMOS Setup Utility - Copyright (C) 1984-2000 Award Software
PnP/PCI Configurations
Reset Configuration Data
Disabled
Resources Controlled By
Auto(ESCD)
X IRQ Resources
Press Enter
PCI/VGA Palette Snoop
Disabled
* PCI IRQ Assignment *
Slot 1
Auto
Onboard AC97/Slot 2,5
Auto
Slot 3
Auto
Onboard USB/Slot 4
Auto
Item Help
Menu Level
Default is Disabled. Select Enabled to reset Extended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the OS cannot boot.
↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

The settings on the screen are for reference only. Your version may not be identical to this one.

Reset Configuration Data

Enabled The BIOS will reset the Extended System Configuration Data (ESCD) once automatically. It will then recreate a new set of configuration data.

Disabled The BIOS will not reset the configuration data.

Resources Controlled By

The Award Plug and Play BIOS has the capability to automatically configure all of the boot and Plug and Play compatible devices.

Auto The system will automatically detect the settings for you.

Manual Choose the specific IRQ in the "IRQ Resources" field.

IRQ Resources

This field is used to set each system interrupt to either Legacy ISA or PCI.

PCI For devices compliant with the PCI bus architecture.
Legacy ISA For devices compliant with the original PC AT bus specification.

PCI/VGA Palette Snoop

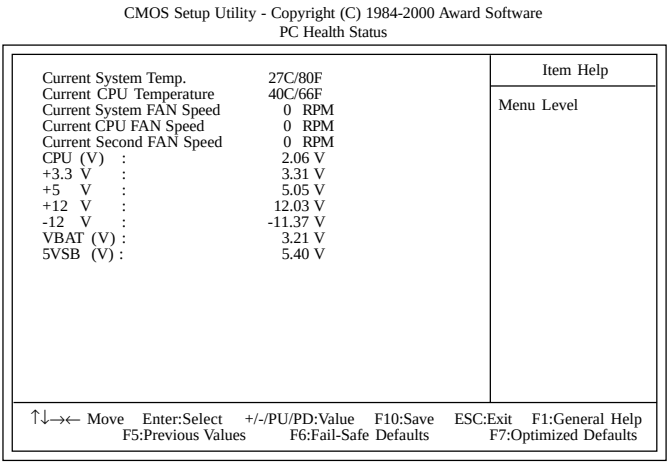
This field determines whether the MPEG ISA/VESA VGA cards can work with PCI/VGA or not. The default value is Disabled.

Enabled MPEG ISA/VESA VGA cards work with PCI/VGA.
Disabled MPEG ISA/VESA VGA cards does not work with PCI/VGA.

PCI IRQ Assignment

By default, an IRQ is automatically assigned to the PCI devices that are installed in the PCI slots. If a PCI device has not been assigned an IRQ, you must manually assign an IRQ for the device. During system boot-up, you will see “NA” for the device that does not have an IRQ assigned.

3.1.7 PC Health Status


CMOS Setup Utility - Copyright (C) 1984-2000 Award Software
PC Health Status
Current System Temp. 27C/80F
Current CPU Temperature 40C/66F
Current System FAN Speed 0 RPM
Current CPU FAN Speed 0 RPM
Current Second FAN Speed 0 RPM
CPU (V) : 2.06 V
+3.3 V : 3.31 V
+5 V : 5.05 V
+12 V : 12.03 V
-12 V : -11.37 V
VBAT (V) : 3.21 V
5VSB (V) : 5.40 V
Item Help
Menu Level
↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

The settings on the screen are for reference only. Your version may not be identical to this one.

Current System Temperature, Current CPU Temperature, Current System Fan Speed, Current CPU Fan Speed and Current Second Fan Speed

These fields show the internal temperature of the system, current temperature of the CPU and the current fan speed of the system, CPU and second fans in RPM (Revolutions Per Minute).

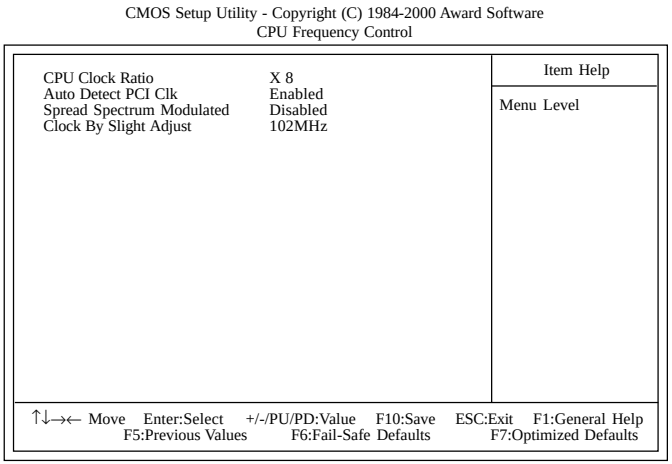
CPU (V)

This field shows the voltage of the processor.

+3.3V, +5V, +12V, -12V, VBAT (V) and 5VSB (V)

These fields show the output voltage of the power supply.

3.1.8 CPU Frequency Control



The settings on the screen are for reference only. Your version may not be identical to this one.

CPU Clock Ratio

This field is used to select the frequency ratio of the processor.

Important:
The frequency ratio of some processors may have been locked by the manufacturer. If you are using this kind of processor, setting an extended ratio for the processor will have no effect. The system will instead use its factory default ratio.

Auto Detect PCI Clk

When enabled, the system will automatically send clock signals to existing PCI devices.

Spread Spectrum Modulated

Leave this field in its default setting. Do not alter this setting unless advised by an engineer or technician.

Clock By Slight Adjust

This field provides several options for selecting the external system bus clock of the processor. The available options allow you to adjust the processor's bus clock by 1MHz increment.

Important:
Selecting an external bus clock other than 100MHz may result to the processor's or system's instability and are not guaranteed to provide better system performance.

If you selected an option other than the default setting and is unable to boot up the system, there are 2 methods of booting up the system and going back to its default setting.

Method 1:
Clear the CMOS data by setting JP6 to 2-3 On. All fields in the BIOS Setup will automatically be set to their default settings.

Method 2:
Press the <Insert> key and power button simultaneously, then release the power button first. Keep-on pressing the <Insert> key until the power-on screen appears. This will allow the system to boot according to the FSB of the processor. Now press the <Del> key to enter the main menu of the BIOS. Select "CPU Frequency Control" and set the "CPU Clock Ratio" or "Clock By Slight Adjust" field to its default setting or an appropriate frequency ratio or bus clock.

Note:
Use a PS/2 or AT (requires a DIN to mini DIN adapter) keyboard for method 2.

3.1.9 Load Fail-Safe Defaults

The "Load Fail-Safe Defaults" option loads the troubleshooting default values permanently stored in the ROM chips. These settings are not optimal and turn off all high performance features. You should use these values only if you have hardware problems. Highlight this option in the main menu and press <Enter>. The message below will appear.

Load Fail-Safe Defaults (Y/N)? N

If you want to proceed, type <Y> and press <Enter>. The default settings will be loaded.

3.1.10 Load Optimized Defaults

The "Load Optimized Defaults" option loads optimized settings from the BIOS ROM. Use the default values as standard values for your system. Highlight this option in the main menu and press <Enter>. The message below will appear.

Load Optimized Defaults (Y/N)? N

Type <Y> and press <Enter> to load the Setup default values.

3.1.11 Set Supervisor Password

If you want to protect your system and setup from unauthorized entry, set a supervisor's password with the "System" option selected in the Advanced BIOS Features. If you want to protect access to setup only, but not your system, set a supervisor's password with the "Setup" option selected in the Advanced BIOS Features. You will not be prompted for a password when you cold boot the system.

Use the arrow keys to highlight "Set Supervisor Password" and press <Enter>. The message below will appear.

Enter Password:

Type in the password. You are limited to eight characters. When done, the message below will appear:

Confirm Password:

You are asked to verify the password. Type in exactly the same password. If you type in a wrong password, you will be prompted to enter the correct password again. To delete or disable the password function, highlight "Set Supervisor Password" and press <Enter>, instead of typing in a new password. Press the <Esc> key to return to the main menu.

3.1.12 Set User Password

If you want another user to have access only to your system but not to setup, set a user's password with the "System" option selected in the Advanced BIOS Features. If you want a user to enter a password when trying to access setup, set a user's password with the "Setup" option selected in the Advanced BIOS Features.

Using user's password to enter Setup allows a user to access only "Set User Password" that appears in the main menu screen. Access to all other options is denied. To set, confirm, verify, disable or delete a user's password, follow the procedures described in the section "Set Supervisor Password".

3.1.13 Save & Exit Setup

When all the changes have been made, highlight "Save & Exit Setup" and press <Enter>. The message below will appear:

Save to CMOS and Exit (Y/N)? N

Type "Y" and press <Enter>. The modifications you have made will be written into the CMOS memory, and the system will reboot. You will once again see the initial diagnostics on the screen. If you wish to make additional changes to the setup, press <Ctrl> <Alt> <Esc> simultaneously or <Del> after memory testing is done.

3.1.14 Exit Without Saving

When you do not want to save the changes you have made, highlight "Exit Without Saving" and press <Enter>. The message below will appear:

Quit Without Saving (Y/N)? N

Type "Y" and press <Enter>. The system will reboot and you will once again see the initial diagnostics on the screen. If you wish to make any changes to the setup, press <Ctrl> <Alt> <Esc> simultaneously or <Del> after memory testing is done.